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ABSTRACT

The use of learning groups in the introductory psychology classroom at the University of Minnesota, General College, is discussed. Learning groups are used to get students to work together on tasks that teach them concepts or skills. It allows an active discovery process to take place as students use their own and other's resources while working through problems or review exercises. The key to success is tight structure and organization. An explicit and comprehensive course outline, criterion grading, a student workbook, laboratory exercises, frequent quizzes, and extensive feedback are central concepts of the course model. These are necessary features when a class of 270 is divided into groups of four. Teaching assistants and tutors are also used and a training program for them has been designed. Evaluations of the class demonstrate its effectiveness in maintaining student performance, encouraging appropriate study behaviors, and eliciting student's approval of their learning experience. Learning groups provide the social exchange that improves students' educational experience, and avoids modes by which students only listen to lectures or relate to other students competitively. The organization of class sessions on each day of the week is described. (Author/SW)

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USING LEARNING GROUPS IN INTRODUCTORY PSYCHOLOGY

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Abstract

The learning atmosphere for students in today's colleges and universities encourages passivity in learning and competition for grades while it discourages cooperative exchange of ideas. Professors continue to lecture hundreds of years after invention of the printing press made that teaching method obsolete. But education that relies on printed matter alone does not provide the interaction necessary for effective learning. This paper presents an alternative to the usual passive, competitive atmosphere: a course model that improves learning and simulates the learning and working environment that students will encounter in later life.

Learning groups provide the social exchange that improves students' educational experience. This paper describes their use and evaluation in introductory psychology. The key to success in this situation is tight structure and organization. An explicit and comprehensive course outline, criterion grading, a student workbook, laboratory exercises, frequent quizzes, and extensive feedback are central concepts of the course model. These are necessary features when a class of 270 is divided into groups of four. Teaching assistants and tutors are also used and a training program for them has been designed. Evaluations of the class demonstrate its effectiveness in maintaining student performance, encouraging appropriate study behaviors, and eliciting student's approval of their learning experience.

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USING LEARNING GROUPS IN INTRODUCTORY PSYCHOLOGY*

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Are today's colleges and universities good places to learn? In a recent report, the Association of American Colleges (1985) took higher education to task for its current methods and curriculum. Among the concerns raised was that much of college education is solitary and passive. Students spend most of their time sitting in lecture halls or reading textbooks by themselves. College for them is largely a passive, individual experience rather than an active, cooperative one. Although it is true that learning requires individual effort, it also requires practice and active recitation to be accomplished effectively. All too often, students are only required to demonstrate what they've learned on infrequent tests, after which it is usually too late for them to learn much from their mistakes.

The most common teaching method college students currently encounter is the lecture - a curious anachronism left from the pre-printing press era when the spoken word had to compensate for the dearth of books. Today's typical instructors devote a good deal of scholarly effort to preparing lectures - often assembling recent or unpublished material into tours-de force that are on the cutting edge of their disciplines, only to deliver them to audiences struggling to note and retain a fraction of the information presented. Many instructors have dealt with this problem by making their lecture notes available to students. But they often stop short upon realizing their oral presentations have become redundant and begin to wonder what they will do to fill the hours of

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class time alloted to them. Because large class sizes often make increased use of discussion unrealistic, lectures remain pretty much as they have for several hundred years.

Of course, there have been many technological advances over the several centuries since people (students) began gathering together (at universities) to learn from experts (professors). Devices such as chalkboards, public address systems, slide projectors, etc. have been used to improve the delivery and retention of material presented in lectures. But the major technological advance, pioneered by Guttenberg, was mass produced books. Today, textbooks are available for nearly all bodies of subject matter taught at the college level. Although instructors usually consider textbooks inadequate in their coverage and in need of supplement by lectures, they do consider them to be adequate conduits of information, even to students whose reading skills or motivation may not be up to the task. While most publishers have workbooks available for use with their introductory psychology textbooks, they are rarely prepared by the textbook authors and thus may be seen by instructors as unnecessary, too expensive for students, or inappropriate to their course plans. Consequently, they may be only tangentially related to courses (required but not checked or graded) or not used at all.

Textbooks continue to be students' main source of interaction with course material, supplemented by lectures or occasional assigned readings. The prototypic reliance on a textbook to the exclusion of other forms of information presentation was developed by Keller (1968). This revolutionary approach bade farewell to teachers and outlined a plan that put reliance on individual learning through textbook reading assignments and recitation via frequent, criterion-based tests. When students felt they knew the material, they could

be tested on it. If they passed the test they could go on to the next unit. In the original model, lectures were not used and students needed only to interact with test proctors.

The two educational techniques outlined above - lectures and textbooks - largely describe what students receive when they attend a college or university. Today college courses commonly fall somewhere between the medieval lecture and the "Keller plan." Instructors give reading assignments and assume they are understood and retained. They use lectures to supplement text material, discussion if there is time and class size is small enough, and two or three exams or perhaps a term paper to determine what students have learned. If performance is poor on tests or papers, attributions to low student ability or effort are commonly made.

The usual consequence of this state of affairs is an atmosphere in which students compete with each other to demonstrate understanding of lectures and textbooks, write papers, and receive higher grades. It is certainly not the argument of this paper that the American professoriate is to blame for shortcomings in a system based on tradition and maintained by a myriad of institutional forces. Students, administrators, and the public expect professors to "teach" (i.e. lecture). Large classes, heavy teaching loads, research and publication demands, service responsibilities and a lack of knowledge about teaching methods mean most professors function as generations of professors have done before them.

But there are alternatives. For example, Johnson and Johnson and their colleagues (1981) have marshalled substantial evidence to suggest that students work better and learn more in cooperative settings. Aronson and his colleagues (1978) have found similar results consistent with research going back several decades (cf. Deutsch, 1949: Haines and McKeachie, 1967). More specifically, learning groups (Bouton and Garth, 1983) encourage cooperation among students

and offer an active approach to learning. They consist of four or five students whose task is to solve problems and learn material by utilizing the combined resources of group members. The teacher's role becomes that of a guide to learning and a developer of exercises that stimulate learning and recitation.

At a basic level, the issues discussed above raise the question: Why do students need to commute to or live at institutions of higher learning to receive an education? There seem to be three reasons: to get information, to get feedback on their study, and to learn from others. But too much information is delivered inefficiently through lecture instead of being printed or sent to students via electronic media (TV, radio, or computer). And students are all too often given only the infrequent feedback of midterm and final examination grades. It is not too difficult to think of better ways of conveying information and giving feedback. For example, when students register for correspondence courses at the University of Minnesota, they typically are sent books to read along with a study guide written by the instructor. Then, as they finish assignments (usually about 15), they mail them in and receive written feedback from the instructor.

Only for the third reason - learning from others - is there solid justification for collecting people together at colleges and universities to engage in mass learning. People learn from other people and education is in many ways a social process. Unfortunately, college teaching largely ignores this phenomenon. Learning from a professor almost always means listening to her/him lecture. Other students are primarily a source of competition in the classroom.

This paper describes the class organization, method, and results of using learning groups in introductory psychology. Learning groups, a potential solution to the problems discussed above, are a recent addition to a teaching/learning system that has been in development since the early 1970's (Borow and Brothen, 1979). Briefly, learning groups are used to get students to work

together on tasks that teach them concepts or skills. In this way, an active discovery process takes place as students use their own and other's resources while working through problems or review exercises. But anyone who has used learning groups knows that they must be tightly structured if they are to have the intended effect.

The class described in this paper enrolls 270 students who attend class together on Monday, Wednesday and Friday and break into nine laboratory/recitation sections of 30 on Tuesday and Thursday. It is taught in the General College, the open admissions, general education unit of the University of Minnesota which enrolls students with a wide variety of academic records, abilities, and interests.

The Wednesday class session is the only one that might be called traditional in form. This is the only lecture time - an overview of the weekly unit (the academic quarter being divided into nine units) presented by the instructor. The objective of this lecture is not to transmit information but to help students develop a structure they can use to understand the material in that week's unit. Key concepts are related to each other and to concepts from other units.

The Friday session is devoted to a weekly quiz and review. Students complete a 15 item multiple choice quiz within a 20 minute time limit. After the quizzes are collected, students are shown the test items on a screen as they review their answers on a quiz record form. Items are explained and correct answers given. Students thus receive feedback immediately after they take the quiz. The instructor and teaching assistants are available to discuss items after the review session. On the following Monday the distribution of quiz scores is posted so students can compare their performance.

The other class sessions are more explicitly organized according to active learning principles. Mondays and Tuesdays are devoted to data projects (cf. Brothen, 1984). This element of the course is similar to but does not dupli-

cate the content of traditional psychology laboratory courses. The intent is to give students an understanding of what most psychology instructors would agree is central to their field - the empirical approach to understanding human behavior. The projects are organized in a sequence familiar to psychologists. On Monday, students are introduced to a concept through a short oral presentation by the instructor. For example, before a project on difference thresholds, an explanation of the threshold concept is given. Then students take part in an experimental manipulation or complete a questionnaire to produce data. For example, a project on the serial position effect requires students to learn lists of nonsense syllables flashed on a screen with a slide projector. The method used to gather this data becomes clear to them because they begin as subjects and then switch roles to that of investigators. On Tuesday they work in four student learning groups to tabulate their pooled data with the help of teaching assistants and student tutors. They analyze these results and discuss how they will answer the project discussion questions. Individuals are responsible for writing their own answers and turning them in by Thursday.

On Thursday, the groups are constituted again for a review session. All students have a workbook written by the instructor specifically for the course. It contains data projects and review exercises (consisting of fill-ins, study questions, and practice quizzes) for each of nine units. The fill-ins focus students on main points in their text and have the side benefit of helping them improve their reading and study skills. Students transfer their fill-in answers to an answer sheet which is turned in at the beginning of the Thursday session. Turning in a completed fill-in answer sheet that is 100 percent correct is worth two points (of 300 total course points) or one point if 95 percent correct. It is not worth anything if items are left blank. A completed answer sheet also qualifies students for two points if their group correctly completes a matching

exercise. The matching exercise consists of 20 statements about the unit's material and 20 key concepts which can be matched to the statements. Two points are given if all 20 are correct and one point is given if 18 or 19 items are correct. Students may use their books or notes as resources in doing these exercises. Later in small group discussions of the study questions monitored by a laboratory teaching assistant or student tutor, students may receive another point if they contribute.

In all of this, high criterion levels are set and points are awarded to reinforce the behavior of actively working with course material. To establish a sense of common fate and to encourage cooperation, all members are given the same grade for group work. Because students are working on or turning in assignments nearly every day, a comprehensive syllabus is given to students. It contains a class calendar of daily activities, a statement of class procedures, and full information of grading policies including points necessary to achieve certain grades.

The role of teaching assistants and tutors has become central to this instructional system. It would be impossible for it to function without good teaching assistants. And student tutors have added a dimension that has contributed largely to it's success. This has necessitated a change in the instructor role from that of traditional "teacher" to instructional system manager. Student exercises and projects along with grading guidelines for them have been created. Procedures for laboratory sessions have been developed so that teaching assistants and tutors have explicit directions to follow. And an ongoing training program for them has become an integral part of the course system.

The student tutors' primary responsibility is to assist teaching assistants in the laboratories. Tutors are selected from students in previous classes who

received A or high B grades and who showed interest in the class material and in working with other students. Tutors register for a four credit class which requires them to be responsible for one laboratory section (one or two tutors per section) and attend a weekly seminar. The seminar is divided into three parts for the quarter. For the first part of the quarter students have readings and class discussions of issues in teaching and learning. Their role as tutors and techniques of how to perform it are examined. Next they work in learning groups to research a topic of their choosing (e.g. compulsive behavior, child abuse, TV and behavior, etc.) under the instructor's guidance. Finally, each group makes a presentation to the seminar on their chosen topic and prepares a written report.

The role of the tutors illustrates some important elements of this instructional model. Feedback is crucial to learners. Tutors help provide that because they are available while students are working. They are also relatively non-threatening because they are peers instead of professors or teaching assistants. And because they are peers, they serve as positive role models who have succeeded in the course. Being a tutor is also excellent experience for teaching assistant candidates (who are selected from the ranks of previous tutors).

The course is considered an ongoing research and development project. Consequently, changes in procedure are made after each quarter's experience. A primary criterion used to measure progress is smoothness of operation as judged by the instructor and four laboratory assistants. In addition, several pieces of data have been collected which suggest that course procedures are successful. First, although it might be argued that less time spent in lecture to receive information "first hand" would cause student exam performance to suffer,

examination performance was found not to differ when compared with previous quarters during which lecturing was the major class activity. Second, there may well be concern that students don't attend to business in groups and instead use the time to socialize. (This is a common concern of instructors who value lecturing but apparently haven't taken time to observe the extraneous activities of students sitting through lectures.) A research assistant unobtrusively monitored group interaction over an entire quarter and found on-task activity to occupy over 90% of group members' time. Third, attrition rate is a concern with experimental teaching models. For example, drop-outs were a problem with the original "Keller plan" (cf. McKeachie, 1974). The percentage of students starting and completing this course with passing grades regularly exceeds 90%.

Finally, one might ask what students think of the course. In a course evaluation done after Fall quarter 1984, students gave high ratings to all aspects of the course. For example, on a five point scale with 3=agree moderately, 4=agree strongly, and 5=agree totally, students said the learning groups (3.56) and the class organization (3.82) helped them learn, and they felt their reading ability (3.15) and their study habits (3.29) improved. In all the ways it has been analyzed, the course has proved successful and learning groups have played a major role in that success.

REFERENCES

Aronson, E., Blaney, N., Stephan, C., Sikes, J., and Snapp, M. The Jigsaw Classroom. Beverly Hills, CA.: Sage, 1978.

Association of American Colleges Committee. Integrity in the college curriculum, Chronicle of Higher Education, Feb. 13, 1985.

Borow, H. and Brothen, T. Teaching psychology to high risk college students: A developmental research project. Paper presented to the 87th Annual Convention of the American Psychological Association, Sept. 1-5, 1979.

Bouton, C. and Garth, R. (eds.). Learning in groups. San Francisco: Jossey-Bass Inc., 1983.

Brothen, T. Three computer assisted laboratory exercises for introductory psychology. Teaching of Psychology, 1984, 11, 2, pp. 105-107.

Deutsch, M. An experimental study of the effects of competition and cooperation upon group process. Human Relations. 1949, 2, 199-231.

Haines, D., and McKeachie, W. Cooperative vs. competitive discussion methods in teaching introductory psychology. Journal of Educational Psychology, 1967, 58, 386-390.

Johnson, D. W., Maruyama, G., Johnson R., Nelson, D., and Skon, L. Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. Psychological Bulletin, 1981, 89, 2, 47-62.

Keller, F. Goodbye teacher. Journal of Applied Behavior Analysis, 1968, 1, 79-89.

McKeachie, W. Instructional psychology. Annual review of psychology. Palo Alto: Annual Reviews Inc., 1974.